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ABSTRACT

This study compared the cognitive, social, and global self-perceptions of gifted children, over the course of a school year, in three settings that represented increasingly higher concentration levels of exceptional cognitive ability and for increasingly extensive parts of the day. Subjects were 176 students in grades 3-5 from the following three settings: traditional heterogeneously mixed classrooms, a continuous progress school district, and a magnet school for math and science. Results indicated that increasing concentrations of high ability students were associated with lower cognitive self-perceptions. There was some indication of higher social perceptions in the magnet school. Overall sense of worth showed no program effects, lending support to its characteristic of being more globally influenced than is self-perception of cognitive ability. (Includes 16 references.) (JDD)

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Self-Perception and the Grouping of Gifted Children

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With the emergence of an increasing number of programs for gifted children over the last two decades has come an attempt to assess the effect of these programs on the psychosocial well-being of the participants. General studies of the self-concept of gifted versus non-gifted students support the view of higher global self-concepts among those possessing exceptional ability (Karnes and Wherry, 1981; Bracken, 1980; Lehman and Erdwin, 1981). Gender appears to be a mediator of self-concept, at least among gifted junior high students (Kelly and Colangelo, 1984), with lower self-concepts among girls. Age differences may also exist as has been found in the self-esteem literature as a whole (O'Donnell,1976; Eskilson, 1987). In her norming population, Susan Harter did not find significant differences by grade in children of grades 3 to 5, although there were grade differences during the middle school years (Harter, 1985). However, the potentially mediating effect of age has not received systematic study in the research on the self-esteem of the gifted population.

These studies of gifted chidren all used a global measure to assess self-concept. Ross and Parker (1980), using the Sears Self-Concept Inventory, studied the academic and social perceptions of gifted 5th through 8th grade students. They found that the academic self-concept of these children was significantly higher than their social self-concept.

Looking at the impact of special programs for the gifted, other researchers (Coleman and Fults) have concluded that special programs produce lower self-concepts in elementary school students. However, while the experimental gifted chidren of Coleman and Fults had a mean IQ of 136.28 with a range from 126 to 150, the control group of 'gifted' children had a mean IQ of 118.18 and a range from 109 to 124. Evans and Marken (1979), testing a group of sixth to eighth grade students, and Karnes and Wherry (1981), testing students in grades four to seven, found no difference in self-concept between high IQ program participants and high-IQ non-participants, although Evans and Marken did report significantly higher control group scores on the congeniality-sociability subscale. These researchers did not use a pre-post test design. Also, students in the control group consisted of those who elected not to participate in the program, after having been chosen for it, thus making it unclear if the experimental and control groups were comparable on ability and motivational levels. Further, most of these studies related to 'pull-out'

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programs, where the gifted children were taken out of their classrooms one day a week or the like and given special enrichment activities, rather than special programs where children are given their fundamental education in one or more subject areas within the context of the program.

In her studies of self-esteem, Susan Harter has found that, past the age of 7, the self-concept has many dimensions in addition to an overall sense of worth, the complexity of which increases as one matures (Harter, 1988). For children of elementary school age, she has developed a scale measuring a global self-perception of worth as well as five distinct aspects of self-perception: the cognitive, social, behavioral, athletic, and physical appearance. While these dimensions are interrelated, they do have separate meanings.

Festinger's (1954) social comparison theory suggests that we take our image of ourselves from those around us. So if the majority in our environment are as cognitively endowed as we are, we may not see ourselves as cognitively superior as we would if those in our comparison group were not so gifted. The cognitive grouping of children, then, may affect their self-perceptions of this ability. Studies of the gifted have also noted that such individuals often have unusual interests and so may have difficulty in their social life, particularly as children, where the social comparison group does not typically share such interests (Terman, 1925; Freeman, 1979). The social self-concept of gifted children, then, may be suppressed when their social comparison group is the general population. But not all studies support a negative relationship between IQ and social superiority. In fact, positive associations have been found between academic competence and popularity (Miller, 1956; Gallagher and Crowder, 1957).

Harter's study of the global self-worth of the individual supports the theory that this self-view is most closely affected by the view of significant others toward the self. Thus, in the developmental years, parents' esteem of the child is closely related to the child's sense of worth. Likewise, the opinions of teachers, coaches, and others with whom the child engages on an ongoing basis, may all and in combination significantly affect the global perception, thereby attesting to the more global constructing of the overall sense of self-worth.

Since the self-concept encompasses several dimensions distinct from an overall sense of self-worth, this study aimed to clarify the issue by comparing the cognitive, social, and global self-perceptions of gifted children, over the course of a school year, in three settings, that represented increasingly higher concentration levels of exceptional cognitive ability (cognitively homogeneous) and for increasingly extensive parts of the day. Based upon Festinger's social comparison theory and the general findings of the Harter studies, it was hypothesized that :

H1: Students who had been grouped such that most of the students around them were also very bright (cognitively homogeneous) would have and maintain, over the course of the school year, the lowest perception of cognitive competence, with gradually higher cognitive self-perceptions in students who were less homogeneously grouped.

H2: Obversely, perceptions of social competence would be highest among gifted children in the more homogeneously grouped settings, since the unusual interests and characteristics so often found in gifted children would make those children, surrounded by similar classmates, feel more socially acceptable.

H3: Because the construct of global self-worth is a composite of a wider number of factors, there would be no effect of the groupings on overall self-worth.

Method

Subjects: Subjects for this study were 176 third to fifth grade students in central Texas, including 53 children from a magnet school for math and science, 77 children from schools in a continuous progress school district, where children were grouped across classrooms of a given grade, by subject, for math and for language arts-reading instruction, and 46 children in traditional heterogeneously-mixed classrooms in a third school district. Children were selected for the study if (1) they had an achieved IQ of 120 or higher on the Cognitive Abilities Test of the ITBS or on the Test of Cognitive Skills of the CTBS, and (2) they were in the 90th percentile or higher on the ITBS math achievement composite or on a quantitative aptitude test, such as the DCAT. In the magnet school, approximately 75% of the children met these criteria. In the continuous progress schools, a given classroom, grouped by subject, included from 10% to about 60% of the students meeting these criteria. In the traditional classrooms, the average was about 10%. Thus, the magnet school setting represented the greatest concentration of high ability students and for the greater amount of time (all day), the traditional classrooms, the least. Final inclusion in the study required parental consent. Almost all students in a given program had participated in that program for at least one year.

Instrument: The students were administered Susan Harter's Self-Perception Profile for Children in the fall and again in the spring of the 1989-1990 school year. This instrument was chosen because it measures the cognitive and social dimensions of self-perception as well as global self-worth.

Results

Mean pre and post test scores on each self-perception dimension by group are given in Table 1. Since IQ, gender, and grade could be expected to influence perceived competence, preliminary analysis of variance to determine if children in the various groups differed in levels of these variables was performed, and if so, if these factors affected the various perceived competencies, with pretest levels covaried. These levels are also given in Table 1. Results indicated that, while IQ levels did differ significantly among groups ($F= 6.22, p< .02$), IQ was not a significant factor in perceived abilities, once pretest levels were covaried (See Table 2). There were no signficant gender or grade differences among the groups ($X^2=.024$, df=2, $p<.99$; $X^2 = 1.58$, df=4, $p<.81$ respectively). Furthermore, neither of these factors significantly affected the perceptions of interest.

Since the hypotheses focused on the relative effects of ability concentration grouping on self-perception, the data was analyzed using analysis of covariance on ordered categorical variables, with the pretest scores as covariates, to determine the effect of the three groupings on the self-perceptions, with programs rank ordered from 1 to 3, representing the least to the greatest concentration of students of exceptional ability. These results are given in Table 3.

H1: This hypothesis was fully supported. Results indicated a strong ordered grouping effect on perceived cognitive competence during the school year, in the hypothesized direction ($B=-.70$, $t=-2.289$, $p<.02$). Additionally, analysis of variance on the ordered pretest scores for this dimension revealed significant program differences ($B=-.79$, $t=-2.25$, $p<.026$). Thus, students not only evidenced ordered grouping effects at the start of the study, probably due to previous years of program participation, but also continued to reflect in increasing levels, the hypothesized effects of grouping homogeneity on their self-perceptions of cognitive competence over the course of the current school year.

H2: This hypothesis was not supported. There was no significant current school year effect of program participation on the social self-perception of the students ($F=5.96$, $p<.43$). But the hypothesized order effect of grouping on self-perception of social competence was significant in the fall ($B=.96$, $t=2.18$, $p<.03$). Note also that the social self-perception of magnet school students remained the highest in the spring.

H3: This hypothesis was also fully supported. There were no significant order effects over the course of the school year in levels of self-worth ($F=.58$, $p<.56$), or in these levels at pre or post testing ($F=.17$, $p<.68$; $F=1.35$, $p<.25$, respectively).

To analyze the differences in self-perceptions of the gifted versus the general population represented by the Harter norming groups, pretest scores of the gifted group for each dimension were compared with those of the Harter population. The Harter means for the 351 third to fifth grade students in her samples are given in Table 4. Combining the perceived cognitive competencies of the 176 'gifted' students over programs, the mean cognitive perception of the gifted children in this study on the pretest was 3.22 . This mean is significantly higher than that of the norming population's 2.78 ($t=7.52$, $p<.001$). The overall social perception of the gifted subjects (2.95) likewise differed significantly from that of the norming group's mean of 2.80 ($t=2.49$, $p<.02$). Furthermore, the gifted students evidenced higher overall self-worth perceptions ($t=6.24$, $p<.001$).

Discussion

By defining and measuring specific dimensions of the self-esteem of gifted children in three programs with increasing concentrations of children of exceptional ability and by using identical definitions of giftedness for all groups,

this study has sought to resolve previous discrepancies regarding the effects of such grouping on the self-perceptions of gifted children. In line with Festinger's social comparison theory, it is with respect to perceived cognitive competence that increasing concentrations of high ability students were associated with lower cognitve perceptions. This result says that as the comparison group becomes more similar, the exceptional cognitive ability does not stand out as obviously as it does when the comparison group is a cross of the general population. While there was no overall program link with perceived social competence, there was some indication of higher social perceptions in the environment with the greatest percentage of very bright students, the magnet school. Finally, the overall sense of worth showed no program effects, lending further support to its characteristic of being more globally influenced than is perhaps one's perception of one's cognitive ability.

Concurrent with other studies, the global self-concept, along with the individual dimensions of perceived cognitive and social abilities, was higher in the population of gifted children than in the general population. Likewise, the social self-perception of the gifted was lower than the cognitive self-perception, aligning with the findings of Ross and Parker. This did not hold true for the norming population. Such findings imply that the variable on which the children differed most, cognitive ability, evidenced the greatest differences in self-perception between the gifted and general populations.

So generally, Festinger's social comparison theory was realized in this study of the differential effects on perceived cognitive ability of the various programs for the gifted. Likewise, Harter's previous work on the robustness of the global sense of self-worth was borne out in this study of program effects. Some evidence of social perceptual differences between programs was found, although not as a program effect. The mixed findings on this dimension reflect the conflicting results of previous studies and suggests that some underlying factors may be driving this variable. Perhaps, future studies need to divide the IQ of the participants into finer partitions, examining those with IQs three standard deviations or more from the mean, for program effects on perceived social competence, and comparing those results with program effects on the gifted with IQs less than three standard deviations away. It may be that only those at the extreme end of cognitive ability feel a strong sense of isolation from the general population. While some of this work has been done (Hollingsworth, 1942), the sample sizes were too small to admit of any firm conclusions.

Conclusions

To derive an accurate assessment of programs, studies of program effects need to divide the self-concept into its various dimensions. Furthermore, the comparison of three programs reflecting varying degrees of cognitive grouping allows for greater sensitivity to order effects. It is also important that the experimental and control groups of gifted students meet the same definition of giftedness. Finally, studies of educationally substantial programs for the gifted, not just pullout programs, may provide a better indication of the effects of various grouping programs on the gifted.

Table 1

Self-Perception Dimension	Magnet Pre	Magnet Post	Continuous Progress Pre	Continuous Progress Post	Traditional Pre	Traditional Post
Cognitive:						
Mean	3.11	3.16	3.21	3.28	3.36	3.46
S.D.	.60	.59	.50	.51	.56	.45
n	47		60		61	
Social:						
Mean	3.13	3.09	2.88	2.89	2.85	2.99
S.D.	.68	.75	.71	.77	.70	.62
Global:						
Mean	3.38	3.34	3.38	3.35	3.46	3.50
S.D.	.66	.73	.68	.65	.51	.47
IQ						
Mean (S.D.)	129.42 (6.83)		125.25 (4.92)		128.52 (7.04)	
Gender						
Boys, Girls	35, 17		51,26		31,15	
Grade						
3, 4, 5	18, 16, 19		23, 21,33		18, 11, 17	

Table 2

Perceived Cognitive Competence

Source	SS	df	MS	F	P
IQ	22.58	1	22.58	2.82	.0952
Error	1160.93	145	8.01		

Perceived Social Competence

Source	SS	df	MS	F	P
IQ	6.34	1	6.34	.61	.4371
Error	1513.96	145	10.44		

Global Self-Worth

Source	SS	df	MS	F	P
IQ	16.21	1	16.21	1.66	.1998
Error	1417.53	145	9.78		

Table 3

Perceived Cognitive Competence

Source	SS	df	MS	F	P
Program	41.56	1	41.56	5.24	.02
Error	1142.23	145	7.88		

Solution: Posttest=12.97 - .70(Program) + .43(Pretest) + E

Perceived Social Competence

Source	SS	df	MS	F	P
Program	62.65	1	62.65	5.96	.43
Error	1513.77	145	10.44		

Global Self-Worth

Source	SS	df	MS	F	P
Program	5.68	1	5.68	.58	.56
Error	1390.89	142	9.80		

Table 4

Self-Perception Dimension	Harter Group	Gifted Group pre	Gifted Group post
Cognitive:			
Mean (S.D.)	2.78 (.71)	3.22 (.55)	3.29 (.52)
Social:			
Mean (S.D.)	2.80 (.73)	2.95 (.70)	2.98 (.72)
Global:			
Mean (S.D.)	2.97 (.73)	3.40 (.63)	3.39 (.63)

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